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EXAMINER	
LEE, ANDREW CHUNG CHEUNG	
ART UNIT	**PAPER NUMBER**
2664	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/810,938	HJARTARSON ET AL.	
	Examiner	Art Unit	
	Andrew C Lee	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/09/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Aug 07, 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Office would like to thank the Applicants' amendment to the Specification as recommended and also for the remarks.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 18, 19, 20, 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain NEW subject matters which were not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Referring to the Amendments to the claims (dated 12/09/2004), page 5 — regarding claim 18, the subject matters or elements " a first transmission channel'; "a first variable frequency bandwidth" as disclosed in line 1 – 2; "second transmission channel", " second variable frequency bandwidth " as disclosed in lines 3 – 4; " to adjust a band edge of either said first transmission channel or said second transmission channel increase or decrease said first and second variable frequency bandwidths" as disclosed in lines 5 –7; Regarding claim 19, the subject matters or elements " a third transmission channel'; a third variable frequency bandwidth" as disclosed in line 2; Regarding claim 20, the subject matters or elements "a first transmission channel'; "a first variable frequency bandwidth" as

disclosed in line 5 – 6; "second transmission channel", " second variable frequency bandwidth " as disclosed in lines 6 – 7; " to adjust a band edge of either said first transmission channel or said second transmission channel increase or decrease said first and second variable frequency bandwidths" as disclosed in lines 8 – 10. Regarding claim 21, the subject matters or elements " a third transmission channel"; "a third variable frequency bandwidth" as disclosed in lines 3 – 4. All the subject matters are new elements that were not described and disclosed in the original specification during the application was filed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11, 13 and 14 recite the limitation "POTS detector circuit" in line 2 of claim 11, line 1 of claim 13 and line 1 of claim 14. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 11, 14 - 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Timm et al. (U.S. Patent No.6055268).

Regarding Claim 1, Timm et al. discloses the limitation of a line interface for coupling a twisted pair telephone line with a communications network (Fig. 1a, column 8, lines 55 – 65), comprising: a broadband analog front end circuit coupling said twisted pair telephone line with said line interface (Fig. 1a, column 8, lines 65 – 67); and a programmable filter coupled to receive an output signal from said broadband analog front end circuit (Fig. 15c, elements 1512, 1514; column 49, lines 9 – 10; lines 25 – 27) and configured to filter frequency bands of said output signal into a plurality of separate, variable bandwidth transmission channels, wherein said plurality of separate variable bandwidth transmission channels are associated with said communications network (Fig. 15c, column 6, lines 53 – 58; column 25, lines 16 – 67), and wherein said frequency bands and said variable bandwidths are determined by programming said programmable filter (column 49, lines 9 – 10; column 19, line 62 – 67; column 20, lines 2 - 11; column 25, lines 16 – 67)

Regarding Claim 2, Timm et al. discloses the limitation of communications network comprises a data network and a voice network (Fig. 2; column 1, lines 41-44).

Regarding Claim 3, Timm et al. discloses the limitation of line interface comprising: an analog to digital converter circuit (Fig. 7; column 7, lines 44-46), coupled between said broadband analog front end circuit and said programmable filter (Fig. 7;

column 8, lines 36-47), configured to convert said output signal to a digital signal (column 7, lines 46-49), wherein said programmable filter is a digital programmable filer (column 7, lines 62-65).

Regarding Claim 4, Timm et al. discloses the limitation of plurality of separate transmission channels are directed to a plurality of different service providers (Fig. 14a, element 'to Backbone networks').

Regarding Claim 5, Timm et al. discloses the limitation of plurality of separate transmission channels are directed to a plurality of different modulation schemes (column 4, lines 50 – 60).

Regarding Claim 6, Timm et al. discloses the limitation of the line interface of said programmable filter is programmed with software (column 7, lines 62-63).

Regarding Claim 7, Timm et al. discloses the limitation of the line interface wherein said software is downloaded to said programmable filter (column 9, lines 1 – 4; lines 25 – 37).

Regarding Claim 8, Timm et al. discloses the limitation of the line interface wherein said plurality of separate frequency bands are determined according to a

protocol including at least one of POTS, ISDN, ADSL, VDSL, SDSL, IDSL, HDSL, and HDSL2 (column 4, lines 50 – 60).

Regarding Claim 9, Timm et al. discloses the limitation of the line interface wherein said ADSL is one of full rate ADSL, G.Lite, CAP, and QAM (column 3, lines 60 - 64; column 4, lines 50 – 60).

Regarding Claim 10, Timm et al. discloses the limitation of the line interface of said ADSL and said POTS coexist on said twisted pair telephone line (Fig. 5b, column 17, lines 16 – 19).

Regarding Claim 11, Timm et al. discloses the limitation of the line interface comprising: a POTS detector circuit coupled to provide a POTS usage signal to said programmable filter indicating that a POTS bandwidth is in use(Fig. 1b, element "telephone interface", column 8, lines 62 – 67; column 9, lines 34 – 42).

Regarding claim 14, Timm et al. discloses the limitation of the line interface of claimed wherein said POTS detector circuit determines if a POTS signal is communicated in said ADSL bandwidth or if said POTS signal is communicated in said POTS bandwidth (Fig. 1b, element 'telephone interface'; column 8, lines 55 - 67).

Regarding claim 15, Timm et al. discloses the limitation of a method of providing a plurality of services over a twisted pair telephone line (column 6, lines 5 – 10; column

11, lines 8 – 16), comprising the acts of: receiving a broadband analog signal from said twisted pair telephone line (column 10, lines 27 – 30; lines 42 – 44; lines 54 – 61); filtering said broadband analog signal using a programmable filter into a plurality of separate bands wherein said plurality of separate bands are determined by programming said filter to generate a plurality of variable bandwidth channels (Fig. 15c, column 6, lines 53 – 58; column 25, lines 16 – 67); and transmitting said plurality of separate bands to a plurality of different service providers (Fig. 2d, elements 2002, 2004; Fig. 14a, element 'backbone networks'; column 11, lines 9 – 14).

Regarding claim 16, Timm et al. discloses the limitation of the method of claimed wherein said separate bands are transmitted to said plurality of different service providers through a data network and a voice network (Fig. 2d, elements 2002, 2004; column 11, lines 24 – 31).

Regarding claim 17, Timm et al. discloses the limitation of the method of claimed wherein said programmable filter is upgraded by programming said filter with software (column 9, lines 1 – 4; column 45, lines 13 – 25).

Regarding claims 18, 20, Timm et al. discloses the limitation of a line interface for coupling a twisted pair telephone line with a communications network (column 1, lines 12 – 19; column 6, lines 5 – 10), comprising: a broadband analog front end circuit coupling said twisted pair telephone line with said line interface (Fig. 1 a, elements 110,

120, 'subscriber line 140'; column 8, lines 55 – 67); and a programmable filter coupled to receive an output signal from said broadband analog front end circuit and configured to filter frequency bands of said output signal into a plurality of different transmission channels (Fig. 15c, column 6, lines 53 – 58; column 25, lines 16 – 67) including: a first transmission channel having a first variable frequency bandwidth (column 49, lines 9 – 10; column 19, line 62 – 67; column 20, line 2; column 25, lines 16 – 67); and a second transmission channel having a second variable frequency bandwidth (column 49, lines 9 – 10; column 19, line 62 – 67; column 20, line 3; column 25, lines 16 – 67), wherein said programmable filter can be programmed to adjust a band edge of either said first transmission channel or said second transmission channel to increase or decrease said first and second variable frequency bandwidths, respectively (column 49, lines 9 – 10; column 19, line 62 – 67; column 20, lines 2 - 11; column 25, lines 16 – 67).

Regarding claims 19, 21, Timm et al. discloses the limitation of the line interface of claimed further comprising: a third transmission channel having a third variable frequency bandwidth (column 49, lines 9 – 10; column 19, line 62 – 67; column 20, line 4; column 25, lines 16 – 67).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (U.S. Patent No. 6055268) in view of Bremer et al. (U.S. Patent No. 6546090 B1).

Regarding Claim 12, Timm et al. discloses the limitation of the interface comprising: a POTS detector circuit coupled to provide a POTS usage signal to said programmable filter indicating that a POTS bandwidth is in use(Fig. 1b, element "telephone interface", column 8, lines 62 – 67; column 9, lines 34 – 42). Timm et al. does not disclose expressly the line interface of claimed wherein an ADSL bandwidth is expanded to include said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is not in use, and said ADSL bandwidth is reduced to exclude said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is in use. Bremer et al. discloses the limitation of the line interface of claimed wherein an ADSL bandwidth is expanded to include said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is not in use (column 3, lines 29 – 38), and said ADSL bandwidth is reduced to exclude said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is in use (column 3, lines 38 – 49). It would have been obvious to modify Timm et al. to include the line interface of claimed wherein an ADSL bandwidth is expanded to include said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is not in use, and said ADSL bandwidth is reduced to exclude said POTS bandwidth when said POTS

usage signal indicates that said POTS bandwidth is in use such as that taught by Bremer et al. in order to offer robust communication between a central office and a customer premises.

Regarding Claim 13, Timm et al. discloses the limitation of the interface comprising: a POTS detector circuit coupled to provide a POTS usage signal to said programmable filter indicating that a POTS bandwidth is in use(Fig. 1b, element "telephone interface", column 8, lines 62 – 67; column 9, lines 34 – 42). Timm et al. does not disclose expressly the line interface of claimed wherein said POTS detector circuit detects whether a telephone connected to said twisted pair telephone wire is on hook or off hook. . Bremer et al. discloses the limitation of the line interface of claimed wherein said POTS detector circuit detects whether a telephone connected to said twisted pair telephone wire is on hook or off hook (column 11, lines 13 – 17). It would have been obvious to modify Timm et al. to include the line interface of claimed wherein said POTS detector circuit detects whether a telephone connected to said twisted pair telephone wire is on hook or off hook such as that taught by Bremer et al. in order to offer robust communication between a central office and a customer premises.

Response to Arguments

10. Applicant's arguments with respect to claims 1 – 21 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ACL April 19, 2005

Ajit Patel
Primary Examiner